

# ***THE B&O MODELER***

Volume 4, Number 1

JANUARY/FEBRUARY 2008



**TWO FOR "T" - MODELING B&O'S FIRST MOUNTAIN-TYPE LOCOMOTIVES  
BUILDING SUNSHINE MODELS' M-55C BOXCAR  
SD-7 #760 – MODELING B&O'S FIRST SD TYPE LOCOMOTIVE**

**SPECIAL SUPPLEMENT ICW TKM AND TS-CLM (FEBRUARY 2008)  
THE WOOD-SHEATHED CARS OF THE FGEX/WFEX/BREX FREIGHT  
REFRIGERATOR FLEET: 1940-1953 ([CLICK HERE](#))**

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**Cover Photos – Top, B&O Class Ta # 5501– Greg LaRocca photo. Bottom, B&O M-55c Boxcar #466146 – William Hanley photo.**

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## AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available. Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

**B&ORRHS**

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## FROM THE EDITOR

### A Plea for Help

I bet you thought I was going to ask for help with *The B&O Modeler*, well I always do that, but in this case I am seeking assistance for something more important to our Historical Society. The Company Store needs your help. Why is the Company Store so important? Does it allow Officers and Board members extravagant expense accounts or allow us to

have lavish Conventions with caviar and champagne? No, the Company Store provides something that Membership Dues to the Society do not, money to preserve and expand the Archives. Almost all of the new photographic information you see in this magazine, *The Sentinel*, and in new multimedia publications comes from the Archives. Our friends that spend their weekends among dusty files also



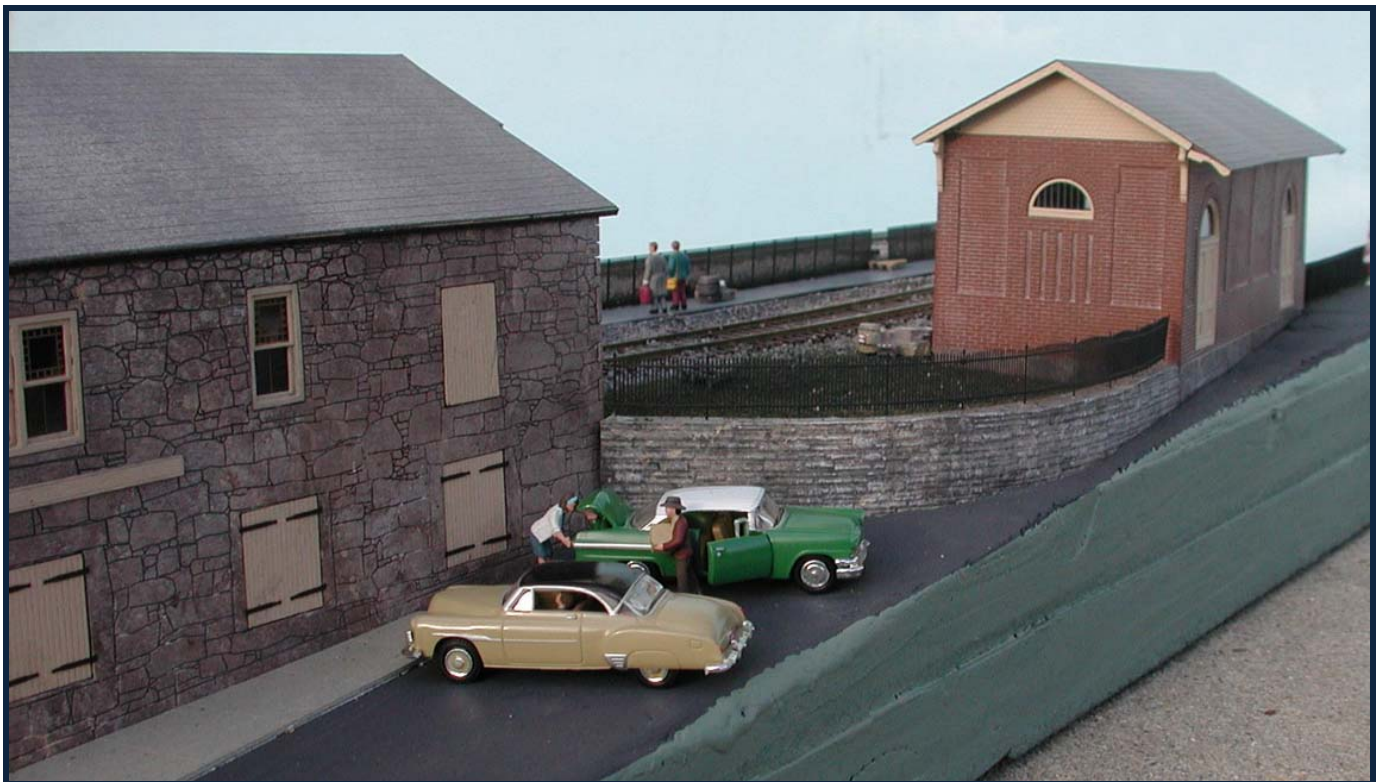
provide us with the information that makes new models possible. Who else is hunting down information about the FGEX Banana Train reefers or has detailed plans of old structures we would like to have produced by a laser kit manufacturer? The money to make this happen comes from the income of the Company Store.

That leads me to two main points. In today's political economy we vote with our dollars. If you want more from the Society and the Archives vote by sending them your research and model buying business. While I am talking about how to spend *your* hard earned dollars, I will ask you to consider your local hobby shop as a second option. In Greensboro, NC I lost my local hobby shop because so many people decided to buy from internet sites that the business was no longer viable. Sure they offered good service and cost a few dollars more, but when everyone decided to save \$1.50 per item and order from the internet, we all lost a local resource. Now we buy small parts for three times the cost to cover shipping. Vote with your dollars and support the Company Store that supports the Archives.

Even worse in today's instant access marketplace, I will suggest that you expect less from your Company Store. How could I ask such a thing? Well with

limited volunteer support (allowing more time for everyone to model and enjoy their historical research), maybe we should only expect our Society volunteers to service the Company Store on a monthly basis. That might mean that you will have to wait longer for a new product or resource, but will allow this function to continue. I am guessing that every B&O modeler who reads this has a project sitting on the shelf that can use your attention while waiting a few extra weeks for your order from the Company Store. Just food for thought.

Finally, my second point. Craig Close volunteered to get the Company Store through for as long as he was able. He did not sign up for a long term commitment and for personal reasons he is not able to continue forever. He is soliciting help to train a few members in the Baltimore area. The tasks involve learning the store operations, receiving and sending orders, and showing up at some show and conventions. If we can't find someone we may have to consider ways to decentralize the operation; so even if you are not in the Baltimore area, send a letter of interest if you can help. Simply, MORE COMPANY STORE SALES = MORE ARCHIVES MATERIALS = MORE PUBLICATIONS = MORE MODELS ON THE MARKET.



Mark Bandy Photograph.

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## MODEL PRODUCT NEWS

EDITED BY ERIC HANSMANN

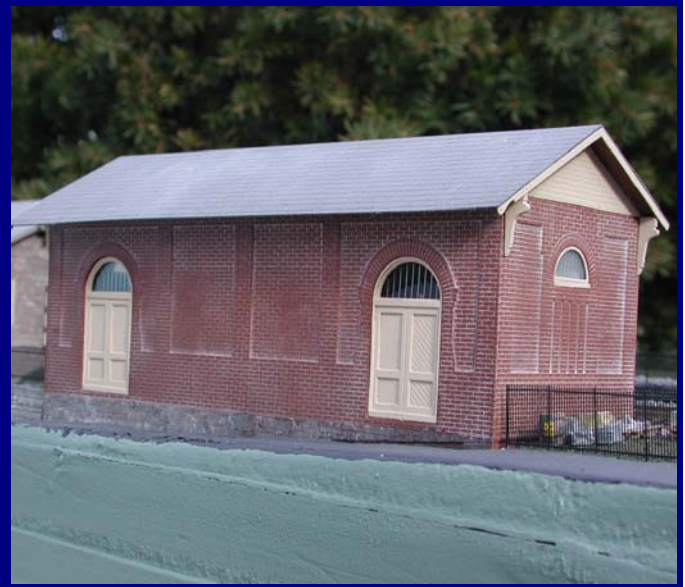
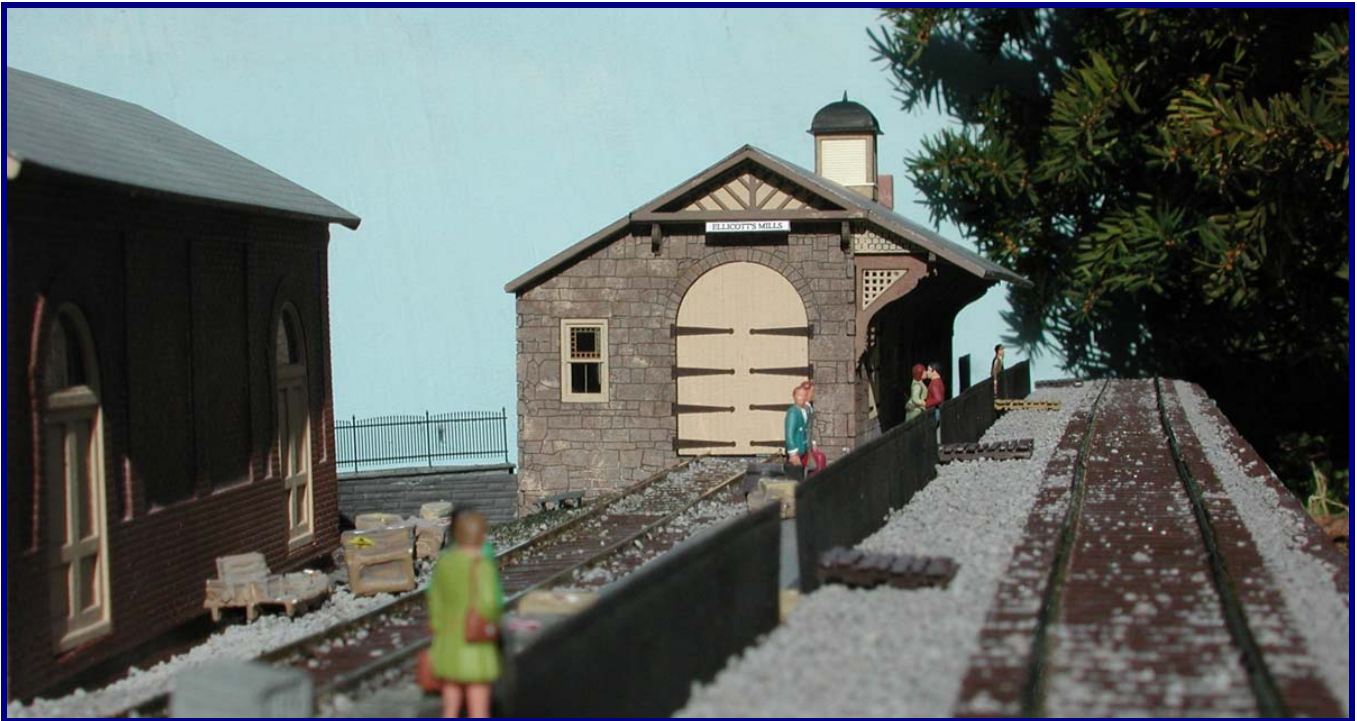
### HO Scale

#### MJB Models

##### Ellicott City, MD and Dickerson, MD Stations

Two limited run laser cut station models are being offered by this new manufacturer, with more in the works. The first two on offer are Ellicott City and Dickerson with Germantown, MD, St. Denis, MD, and possibly Ilchester, MD to follow. These are very limited runs of about dozen kits each. The price for

Ellicott City (two buildings) is \$250.00 and Dickerson is \$55.00, plus shipping. Germantown and St. Denis stations will also be about \$55. A web site is being developed, so contact MJB by email at [mjbmodels@comcast.net](mailto:mjbmodels@comcast.net). N-scale versions may be available in the future.







## N-scale

### Brooklyn Locomotive Works

#### Custom Decorated Micro-Trains N-44 hopper

Another special run of N-44 hopper cars are available at Brooklyn Locomotive Works. These cars are a reprint of the project that Brian DeVries commissioned in the fall of 1999 with three new road numbers. They are \$52.49 for the three-pack or \$18.49 for single cars.

The numbers modeled are from the first month's production (10/56) at the DuBois car shops. In all, some 3,300 N-44's were constructed before the program was completed in 1960. The N-44's were

stenciled "re-built" but these cars, from the center-sills up, were assembled from new Bethlehem Steel components. A few brake rigging and truck components were salvaged from older cars being scrapped at DuBois. The paint scheme is the late "billboard B&O" (with the small ampersand) which was used after 1955. This project will, quite likely, be the final Special Run B&O hopper car project to be run from Micro-Trains tooling. Visit: <http://www.blwnscale.com/BLW-Millennium%20Series.htm> to order.

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## UPDATES AND ERRATA

### First Annual Eastern Spring RPM Meet

- 28-29 March 2008, Carolina Model Railroaders, The Depot, Greensboro, NC. The location is at 234-B West Washington Street in downtown Greensboro in the REA building at the Depot. Hours are Friday 9.00 am thru 5.00 pm and Saturday 9.00 am. thru 4.00 pm. Admission is \$25 at the door. For more information, including a Timetable, Clinics Listing, and Vendors, please contact: Tony Sissons - [c9dash40@carolina.rr.com](mailto:c9dash40@carolina.rr.com).

### Railroad Prototype Modelers (RPM) Meet East 2008 and 2009

- RPM Valley Forge, 28-30 March 2008, The Desmond Hotel & Conference Center, Malvern, PA (western suburb of Philadelphia). Support the Company Store while you are enjoying the meeting. Plans include 40 different clinics, with more possible, a Vendor's Room, a Models Display Room and Home Layout Tours Sunday afternoon. For complete information, including a Timetable, Registration Form, Clinics Listing, and Vendors, please visit the web site: [www.phillynmra.org/rpmmeet.html](http://www.phillynmra.org/rpmmeet.html).
- Pittsburgh Area RPM Meet, 26-29 March 2009, Sheraton Four Points, Greensburg, PA

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## MODEL PRODUCT REVIEWS

### EDITOR NEEDED

#### HO Scale

#### InterMountain Fruit Growers Express 40-foot Wood-Sheathed Refrigerator Car

By Bill Welch with additional comments by Ben Hom, *Model photography by Eric Hansmann.*



*[One of the biggest shortcomings in available rolling stock is the lack of available injection-molded models of refrigerator cars for the Fruit Growers Express consortium (Fruit Growers Express, Burlington Refrigerator Express, Western Fruit Express, National Car Company). This includes not only the B&O, but also other major railroads including the PRR, ACL, SAL, CB&Q, and GN. Nineteen railroads in all made up “Our Companies” (the corporate term for the FGEX/BREX/WFEX/NX consortium), and their cars were seen throughout the Eastern Seaboard, Midwest, and Pacific Northwest hauling a staggering amount and variety of produce.*

*Thanks to the efforts of modelers and historians Tony Thompson, Robert Church, Bruce Jones, Keith Jordan, Richard Hendrickson, John Moore, and A. Dean Hale, the major refrigerator fleets of Pacific Fruit Express and Santa Fe have been well documented. Unfortunately, the same is not the case for Fruit Growers Express, and many modelers really “don’t know what they don’t know”. Fortunately, relief is on the way as modeler Bill Welch is working on a history of “Our Companies”, a task made far more difficult by the scope of the project and the fact that very little corporate documentation survives. Bill has kindly given us permission to reprint his information package on wood-sheathed reefers, which is linked on the front cover to this issue of The B&O Modeler. It is also being published as part of The Keystone Modeler, and The Seaboard-Coast Line Modeler in February 2008.*

*Although accurate HO scale models of some “Our Companies” wood-sheathed reefer prototypes have been available for some time from Sunshine Models and Westerfield in resin and can also be kitbashed from the Accurail wood-sheathed reefer (as detailed by Greg Martin in the March-April 2007 of The B&O Modeler), there has never been an accurate mass-produced injection-molded model, making the InterMountain model’s recent release much anticipated by many prototype modelers; however, as Bill Welch notes below, there is still some work ahead. – Ben Hom]*

In 1947 Fruit Growers Express began to rebuild significant numbers of its own company-built cars from the 32000-35999, 36000-37999, and 50000-51999 series, and those cars acquired new by Western Fruit after it was formed in the 65000-66349 and 67000-67846 series. The early lower-height cars from the FGE 32000-35999 and WFE 65000-66349

series are easily recognized because the featured sidesills of a nominal 6 inches, exposing parts of the cross ties and bolsters. Conversely, cars assigned to the FGEX 57000-59999 and WFEX 71000 series and above with the nominal 8-inch sidesills that characterized the taller cars of the 1927 second company design are easily recognized because the

heavier sidesill obscures the aforementioned underframe components. When rebuilt, the cars emerged with a taller car body that measured 12 feet 10-5/8 inches from the rails to the roof eaves; however, it should be noted that cars from both company-built designs also were rebuilt after the war without an increase in height.

Variations did appear among the rebuilds. Fans were installed in many, but not all of these rebuilds. Cars with fans were noted in the footnotes of the Official Railroad Equipment Registers of the day and are observable in some photos as well. Some rebuilds retained the horizontal brake wheel, often called “stem-winders” by modelers, while others received vertical power hand brakes with steel grate brake steps. Two door height variations exist.



The InterMountain model is supposed to be model of FGE 1927 design with the 8-inch side sill “after” it was rebuilt starting in 1948 with a taller superstructure. This group of original cars was a large quantity of over 3,000 cars for FGE itself, but only a portion of these cars were rebuilt to the new configuration and represents a relatively small portion of “Our Companies” car fleet.

I am disappointed by the InterMountain effort. In my opinion, the ribs on the roof are too small, and the roof is slightly too short and too narrow. It should overlap the sides and ends more. The door height is okay for some cars, and not for others.

It would be possible to cut off the model’s side sill and replace it with 6-inch or 8-inch material to model rebuilt cars without side sill gussets or fishplates; however, the carbody itself would be too high to model the original cars built in 1922 and 1927. Also, my review sample lacked detail parts for the fans. A large number of these cars received fans when they were rebuilt.



I wish the railroad model manufacturers would take the example of the military model manufacturers and build more modularity into their products. Had InterMountain designed a kit with door height and 6- and 8-inch side sill options, this could have been a kit with much potential, but as it has been tooled, this model has limited usefulness. One needs maybe two models of WFE and FGE cars each as a percentage of the respective total fleets. See my article in the February 2005 *Railmodel Journal* to understand how many (or how few) of these cars there were in relation to the total FGE/WFE fleets. Pardon my belaboring this, but it does trouble me that from a prototypical perspective, one cannot justify a dozen or even a half dozen of this car type.



*[Bill's disappointment with InterMountain selecting a prototype that represents a relatively small quantity of "Our Companies" fleet is justified; however, in my opinion, though this model doesn't completely fill the need for accurate Fruit Growers Express reefer models that would appeal to the greatest segment of HO scale modelers, it is at least a start. We hope that we will see more models of common "Our Companies" reefers in the future.]*





## BUILDING SUNSHINE MODELS' M-55C BOXCAR

**BY: WILLIAM HANLEY**

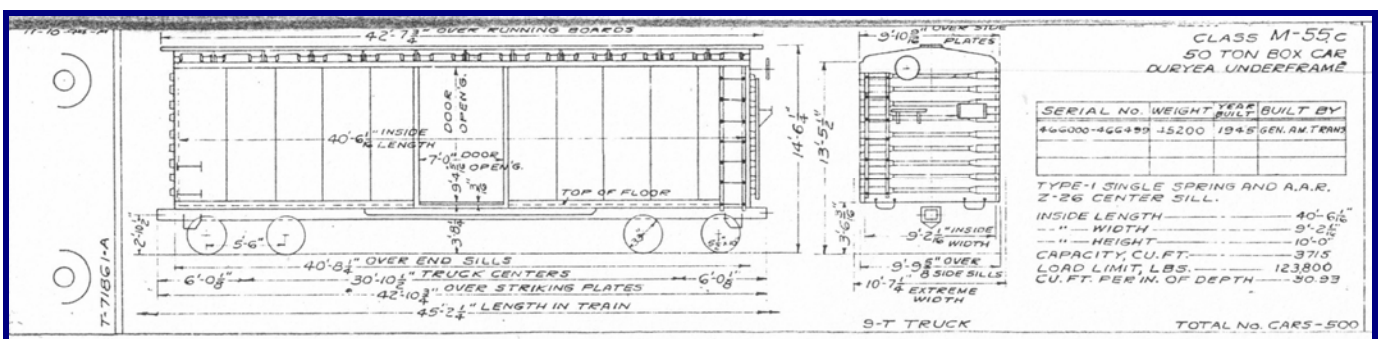
**PHOTOS BY AUTHORS UNLESS OTHERWISE SPECIFIED.**



## The Prototype

The subject of this review is the Sunshine Models Kit #81.1, B & O Class M-55c 10' IH boxcar. The prototype cars were built in 1945 by General American Transportation Corp .and were numbered in the 46000-466499 series. They were delivered with a straight panel roof, 7' Youngstown doors, and General American ends with unique 4/5 square corrugations. The running boards were both Apex

and U.S. Gypsum (a prototype photo in the instructions shows #466117 with an Apex Tri-lock) while the power hand brakes were Ajax. The cars were rated at 50 tons and rode on 9-T trucks (ARA double truss). The M-55c boxcar featured Duryea underframes.



B&amp;ORRHS Collection



1945 builders photo of M-55c, B&ORRHS Collection

## Prelude

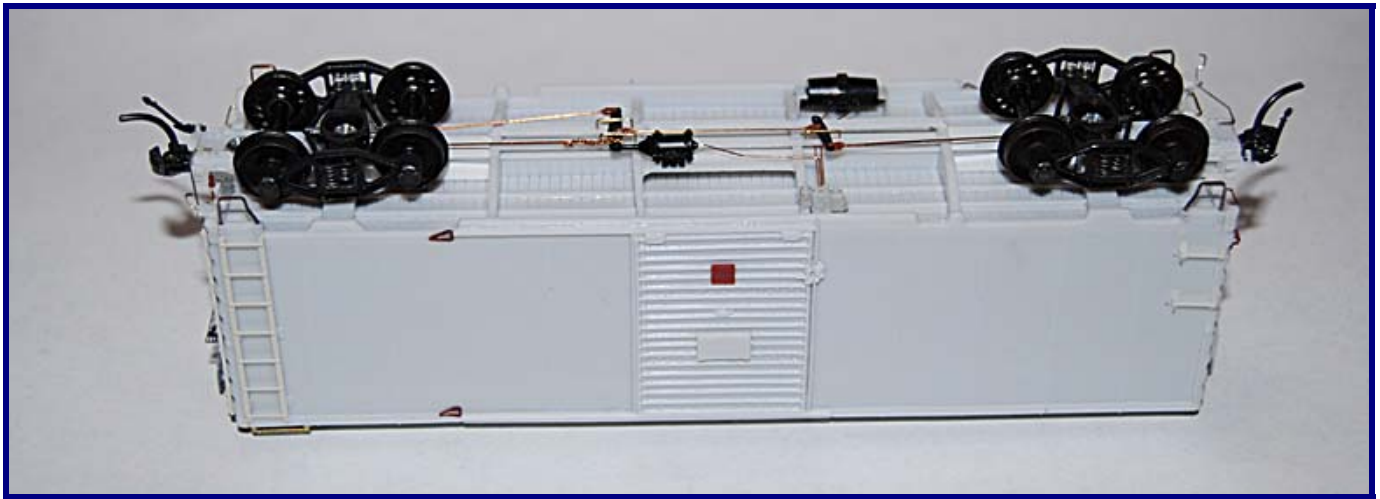
Before beginning this article, let me explain that I had planned on writing a quick review of the kit. As I got deeper into the construction, I realized that this was not going to be a straight forward project if I were going to represent the prototype car as closely as possible – there were far too many things wrong with the kit's components for me to use them as they came from the manufacturer. As I progress, I'll point out these deficiencies and describe how to rectify them. The reader can decide whether or not to follow the steps outlined. In the end, I am satisfied with the results. Also, I would be remiss if I failed to acknowledge and thank those people who were both encouraging and willing to share their knowledge and resource materials. They include, but are not limited to the following: Bob Witt, Ed Boomer, Jim Mischke, and Ron Dudjak.

## Construction

We'll begin by removing the resin parts from their tissue wrapping and removing the roof, sides, ends, and floor. These parts can best be prepared by lightly

sanding the back of the parts with a very fine grade of sandpaper. Lay the sheet of sandpaper, grit side up, on a flat surface and move the resin parts around until the excess resin has been removed. Next, we'll drill and tap the body bolsters for 2-56 screws. At this point, we can glue the sides and ends together with alpha cyanoacrylate (ACC). The ends should extend slightly beyond the sides. Care should be taken to ensure that the corners are square. Next, we'll fit the floor inside the body. You'll note the coupler mounting pads on the floor – these pads should be level and flush with the bottom of the ends. If necessary, either sand the edges of the floor or add strip styrene to ensure a good fit of the floor with the body. Once satisfied, secure the floor with ACC. Now is the time to add additional weight to the car. I placed two ¼ oz. squares directly above the body bolsters and one additional square centered, toward the doors, thus adding a total of 1 ½ oz of weight. To finish the basic body, add the roof casting making sure that is centered on the body. When you are satisfied, apply ACC along the joints. This completes the basic body.





We are now ready to start adding the details beginning with the draft gear. Remove and clean the draft gear boxes, their cover plates, and the small rectangular Duryea plates (they have a flange and two rails on their tops). Glue the Duryea plate to the smooth face of the draft gear box. The width of the plate will dictate how far beyond the ends the draft gear box extends. Glue the draft gear box to the floor, then drill and tap a 2-56 hole through the draft gear box and floor. We will not use glue to secure the draft gear box cover, that's what the screws are for. They will allow for future maintenance. At this time, you can install the trucks and couplers. Next, we'll drill (#79) holes into the tabs at the bottom of the ends for the straight grab irons (one on each side of the draft gear box on both ends). Install the straight grab irons and secure with ACC. Next, we'll attach the stirrup steps, drill two #74 holes into each corner of the bottom of the car side (you'll see the mounting straps for them cast into the car side), insert, and secure. Now would be good time to attach the four large tack boards. See the prototype photographs for their location. The small, square routing boards are not included in the kit. We're going to need another boxcar kit as a source of door stops (a Red Caboose 40' boxcar - more on that latter) and routing boards. Once you've found suitable routing boards, attach as per prototype photos. The following applies only to the M-55c. For those building the M-55h, proceed to the next paragraph. While you have that Red Caboose boxcar handy, we are going to "transplant" the door stops to our M-55c. First – carefully remove the angle iron stops from the M-55c using styrene sprue cutters and trimming any excess with a #17 X-Acto chisel blade. Do the same to the angle found to the left of the door and just below the rivets on the side sill. Carefully slice the door stops from the Red Caboose kit. Keep

the #17 blade tight against the car body and work slowly. The stops will curl slightly but they can be straightened. Locate the new door stops on the M-55c and secure with ACC.

Next to be applied will be the ladders. I used the kit supplied ones. Trim them about 4" from the top rung and just below the 7<sup>th</sup> rung. Round off the stiles above the top rung and attach the ladders to the sides and ends with ACC.

At this point, the builder needs to decide upon the approach to be used with the bracket grab irons, two on the sides and one on the ends. You can follow the manufacturer's instructions for the sides (drill #79 holes through the brackets and insert brass wire through them) and use a bracket grab left over from a previous kit for the single end bracket grab or you can use grabs from another source. I chose to use the bracket grab irons from a Branchline 40' boxcar kit. I cut off the tabs for the cast on grabs with sprue cutters and shaved off the excess with a #17 blade. I drilled #76 holes in the sides and used ACC to secure the grab irons. On the ends, remove the mounting pins for the bracket grabs and ACC them to the mounting pads on the ends. While we are working on the ends, we'll drill #79 holes for the lift rings, to which the cut levers will be attached. Trim the lift rings (supplied) and attach with ACC. The cut levers will be attached as one of the final steps. Clean the two air hose brackets, carefully drill #66 holes for the air hoses, and attach with ACC. The air hoses will be attached after the car is painted.

Next – we'll complete the detailing of the under frame and attach the brake system. Locate the four crossbearers and two long angles. You will notice two small tabs (one on each side) locate to the left of

the door on the bottom of each side. Fit to length, a crossbearer centered on that tab with the flange facing the car end and secure with ACC. Attach the two angles with the flat part toward the centerline of the center sill. The outside edge of the angle will be aligned with the outside of each half of the center sill. You will note that there is a small pad on one of the angles, this is the pivot for the dead lever and establishes the "A" end of the car. You can now fit and attach the two remaining crossbearers, again with the flange facing the car end. Next, I fabricated the "torsion bars" from 0.060" styrene. Their length runs from the body bolster to the first crossbearer and approx. 1' tall at the body bolster end to a low of 6" at the crossbearer end. The cover plate was made from 0.020" styrene and covers the center sill between the body bolster and first crossbearer. You can now attach the dead lever with the center hole of the lever closer to the pivot point making sure that the lever is level with the floor. On the free end of the dead lever, drill two #79 holes in the angle inside of the two rivets. Take one of the straight grab irons and trim the two legs to represent the lever hanger. When inserted into the two holes, the bottom of the hanger should just touch the lever. Secure the hanger with ACC. You can now add the two hangers for the main lever in the same manner. The mounting pad for the brake cylinder is a long rectangular piece. Trim it to the same length as the spacing between the second and third crossbearer but do not glue it in place yet. Take the cylinder and drill a #79 hole in the end for the air line and glue the long (live) lever in the clevis at the other end of the cylinder. The

cylinder, along with the support, can now be attached to the crossbearers and hangers with ACC. Next, we'll fabricate the bracket for the control valve using two lengths of 0.015" x 0.060" styrene. Refer to the photo for location. Rather than the supplied control valve, I used the one from the Tichy AB Brake set. Drill the three #79 holes for the air lines then secure the control valve to the bracket with ACC. Locate the air reservoir and drill two #79 holes. Using the kit supplied hangers, attach the hangers to the air reservoir. Secure the assembly with ACC. The air lines were fabricated with 0.010" phosphor-bronze wire. Refer to photo for location. The brake rigging is fabricated with 0.0125" phosphor-bronze wire. The rods are attached to the levers by taking a Tichy Turnbuckle and cutting it in half. The resulting piece will resemble a tuning fork. The open end goes on the lever while the wire goes through the hole on the closed end. Secure the styrene to styrene with styrene solvent and the wire to the turnbuckle with ACC. The last step in the under body is the rod that runs from the brake wheel to the brake cylinder. Cut a length of chain to about 18 scale inches. Next, run a piece of 0.0125" wire through one end of chain and bend the wire to form a loop, thus securing the rod to the chain. The other end of the chain is secured to the long (live) lever just inside of the clevis. I use 0.010" wire bent in the shape of a "L". Drill a #79 hole and insert through the last chain kink, then into the hole. Secure with a VERY SMALL amount of ACC. Note that ALL rods terminate in holes drilled (#79) in the styrene cover plate and that the chain has a slight "droop".







And now we move on to the roof. While the kit includes a Plane "Morton" running board set, it is incorrect for the M-55c. Cars 466000 thru 466199 were equipped with an Apex Tri-Lock running board and cars 466200 thru 466499 came with a US Gypsum running board. Also, documents provided by Jim Mischke support the notion that cars 466000 thru 466099 were painted in the aluminum over blue "Sentinel" scheme. Prepare the running board supports by placing a sheet of fine grit sand paper on a flat surface and, with the car upside down, gently run the car body back and forth to insure a level set of supports. To attach the running boards, we're going to use a product that you may not be familiar with – it's called Barge (trade name) cement and it can be found in a shoe repair shop. It comes in a 2 oz. squeeze tube and has many qualities like contact cement but gives you some time to adjust the parts position. Squeeze out a few drops onto a polyethylene bag and use a pin or toothpick to apply a small amount on each of the running board supports. Position the running board and press into place. Turn the car upside down and wait about ½ hour to allow the glue to set. You may want to reinforce the bond with SMALL amounts of ACC. Now the end supports – cut two lengths of 1" x 2" styrene strip and two lengths of 1" x 3" styrene strip to the width of the running boards. Using ACC, secure the 1" x 2" to the underside of the running board, flush with the end, on each end. Now we'll attach the 1" x 3" strip vertically to the inside of the 1" x 2", thus creating a 3" x 3" angle. Allow to dry. Next, we'll cut 4 lengths of 1" x 2" strip for the diagonal supports. One end glues to the vertical 1" x 3" and the other to the car's end. Now we'll cut four lengths of 1" x 2" x 2". These go on the car end

below each of the four diagonal supports. As a final touch, an old Mark Vinski (or new Ted Cullota) trick, using a new #17 X-Acto blade, harvest four rivets from an old RTR car and apply them to the center of the 1" x 2" x 2" strips. I use lacquer thinner to secure them. First, apply a small amount of thinner to the area where the rivet is to be positioned, then use a very fine tipped paint brush, moistened with saliva, to pick up each rivet and place it on the desired location. Add more thinner to fix the rivet in place. Assemble and attach the laterals with the parts included with the exception of corner grab iron, which I formed with 0.0125" phosphor-bronze wire. The roof is now complete!





And now we'll detail the "B" end. Start with another 18" length of chain and insert a length (approx. 2") 0.0125" phosphor-bronze wire. Then bend a loop in the wire to secure the length of chain and set aside. From the Tichy AB set, remove the Ajax housing and brake wheel. Glue them together (you'll need to drill a #75 hole in the housing). Allow to dry. Holding the car on end, establish the location of the brake wheel and make a pencil mark at the bottom center of the housing's location. Drill a #79 hole slightly above the pencil mark. This hole should be far enough above the mark that the housing will cover it when it is attached. Next, form a small "L" shaped piece of 0.010" phosphor-bronze wire, slip this thru the end link of chain and secure to the car end with ACC. Secure the housing/wheel assembly with ACC. We can now establish the location of the bell

### Materials

Sunshine Models Kit #81.1 B&O M-55c w/Freight Decals  
 Kadee #511 Bettendorf Double Truss Trucks  
 Kadee #5 or #58 Couplers  
 A-Line Weights ¼ oz with Adhesive Backing  
 Builders in Scale Chain – 40 links per inch  
 Evergreen Scale 1"x2" Styrene Strip  
 Evergreen Scale 1"x3" Styrene Strip  
 Evergreen Scale 0.015" x 0.060" Styrene Strip  
 Tichy Styrene Turnbuckles

crank. Making sure that the rod (0.0125 wire) is vertical, make a pencil mark at the bottom of the end behind the rod. Secure the bell crank (from the Tichy AB set) to the underside of the end. Be sure to allow the bell crank to extend beyond the ribs on the end. Trim the rod so that it is just above the bell crank. Complete the connection with a Tichy turnbuckle cut in half. Add the resin retainer valve and retainer line (0.010" phosphor-bronze). Add the Plano brake step – it rests on two brake step supports from the Tichy AB set. Finally, add the two cut levers. You'll need to bend them beyond the car end to allow for the Duryea draft gear. Secure with ACC. Construction is now complete.

For painting B & O red, I like Scalecoat II Oxide Red. Follow the manufacturer's directions and allow to cure. When thoroughly dry, mask off the sides and paint the under body with Scalecoat II Loco Black. Again, allow to completely dry. You can now re-attach the couplers, trucks, and air hoses. The car can now be decaled. I added some chalk marks which are sold by Sunshine Models. Over spray with Testors Dullcoat and weather to suit.

### Epilog

You will notice that the instructions provided in the kit show a model underbody. If you look closely, you'll note that is a photo of an M-53 Wagontop and that it shows a Tatum XLT Slack Adjuster. In studying prototype photos, there is no evidence that they were applied to the M-55c; therefore, I chose to leave that feature off. If future research shows the application of another type of adjuster, I will install it then. Additionally, if I were to build more of these kits, I would lightly sand the tops of the end ribs flat. In studying prototype photos, the ribs are not round, but flat in appearance.

### Tichy AB Brake Set

Creative Model Assoc. 0.010" Phosphor Bronze Wire  
 Creative Model Assoc. 0.0125" Phosphor Bronze Wire  
 Detail Assoc. Freight Car Uncoupling Levers  
 Plano Apex Tri-Lock or U.S. Gypsum Running Board Set (Depends on the road number)  
 2-56 Screws (4)  
 Scalecoat II Oxide Red  
 Scalecoat II Loco Black





1945 builders photo of M-55c, B&ORRHS Collection

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## TWO FOR “T” - *MODELING B&O’S FIRST MOUNTAIN-TYPE LOCOMOTIVES*

BY GREG LARocca

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



### Introduction

Mountain type locomotives were a natural outgrowth of the Pacific type locomotive, with the first 4-8-2 being used by the C&O in 1911 to eliminate double heading of Pacifics in the mountains of Virginia (Westcott). The B&O didn't get around to building its first Mountains—class T—until Col. Emerson put the boilers from two class S locomotives over 4-8-2 machinery in 1925 (class T #5500) and 1926 (class Ta #5501). It is not clear what differences existed between the two engines to result in the “a” subclass for #5501. They too were intended to relieve double-headed Pacifics on passenger trains, but the Colonel soon lost interest while off in water-tube firebox cloud cuckoo land, and the engines ended up in secondary service (Sagle, 1964). Although Sagle goes on to state that they were West End locomotives, the photographic record suggests that they were stationed at Cumberland and used on Sand

Patch as well; for example, one photo shows #5501 coming out of Falls Cut tunnel as a helper on a freight train (McGuirk, 2001, page 93), although the caption misidentifies the engine as an S-1. Both engines were sold for scrap in 1953. Needing a passenger helper locomotive for my HO Scale rendition of Sand Patch in the 1950's, I decided to add #5501 to my roster. (*For a better understanding of Emerson and the T-Class experiment see: <https://kb.osu.edu/dspace/handle/1811/6203> . Ed.*)

### How Accurate is Accurate Enough?

I decided to model #5501 using the USRA heavy mountain from Bachmann Spectrum. I wanted something that would capture the appearance of these massive beauties without requiring a lot of effort or money. A comparison of the two locomotives yields the following data:



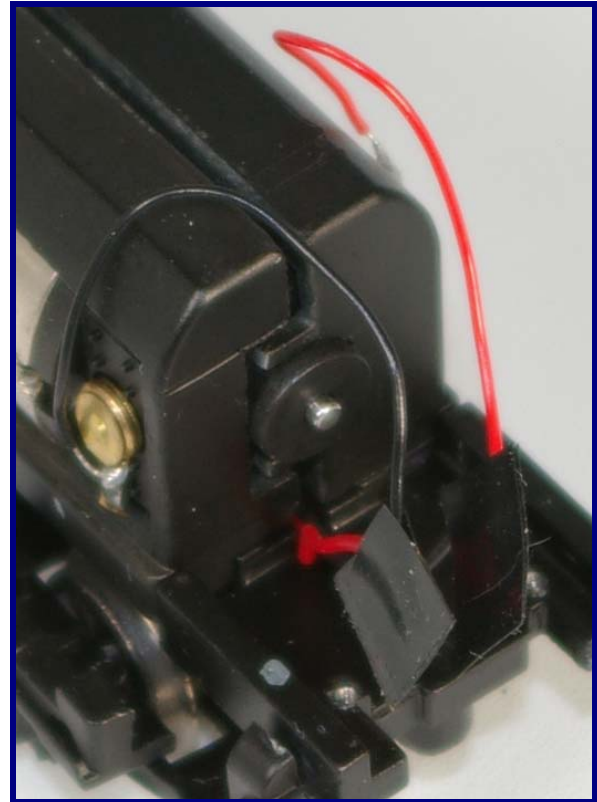
	Cylinders	Driver Diameter	Smokebox Diameter	Boiler Pressure	Engine Weight	Tractive Effort	Valve Gear
<b>Class T</b>	30 x 30 in	74 in	91 ¼ in	220 lbs	400,000 lbs	68, 200 lbs	Baker
<b>USRA Heavy</b>	28 x 32 in	69 in	86 in	200 lbs	327,000 lbs	58,000 lbs	Baker

As can be seen, the USRA Heavy 4-8-2 was smaller than the B&O's T class engines, however, visually; I feel that the Spectrum model resembles the T class closely enough to make a fine stand-in. There are two major visual differences that may keep some of you from duplicating my efforts: the Spectrum engine has a single, one-piece sand dome rather than the T/S/EL style split-type sand dome, and a single cross-compound air pump rather than a double cross-compound air pump. It would take quite a bit of work to change the sand dome since the Spectrum model has a metal one piece boiler, with the dome an integral part of the casting. It might actually be easiest to totally remove the sand dome, and replace it with the EL sand dome castings PSC makes. The air pump would be easier to change in that it is a separate detail part, but the air tanks, cooling coils, and running boards would interfere with a second pump (or a Cal Scale dual pump casting)—and the running boards appear to be metal and part of the boiler, meaning altering that would be a big job. I decided I could live with both discrepancies, and to proceed with building the model. (If anyone does go to the trouble of building a model with does correct these discrepancies, please share and submit an article to *The B&O Modeler*.)

#### **DC? Si! DCC? Err, why don't you get back to me on that?**

One other problem with this model would be equipping it for DCC. Since I don't use DCC, and have no interest in doing so, this problem was of no moment to me. However, if you want to use DCC, well, good luck.

The problem stems from Bachmann building the Spectrum engines such that they have to have the tender connected in order to run. Since we are replacing the tender (see below), this raises a problem. If, like me, you are not using DCC, simply remove the boiler, remove the small board and connectors located under the cab, and connect the remaining wires, remembering to reverse the wires for correct polarity (e.g., black to red and red to black).



This does mean that the engine picks up current only from the driving wheels, but there are enough of them to insure good contact with the rail. The tender in this case is along for the ride only.

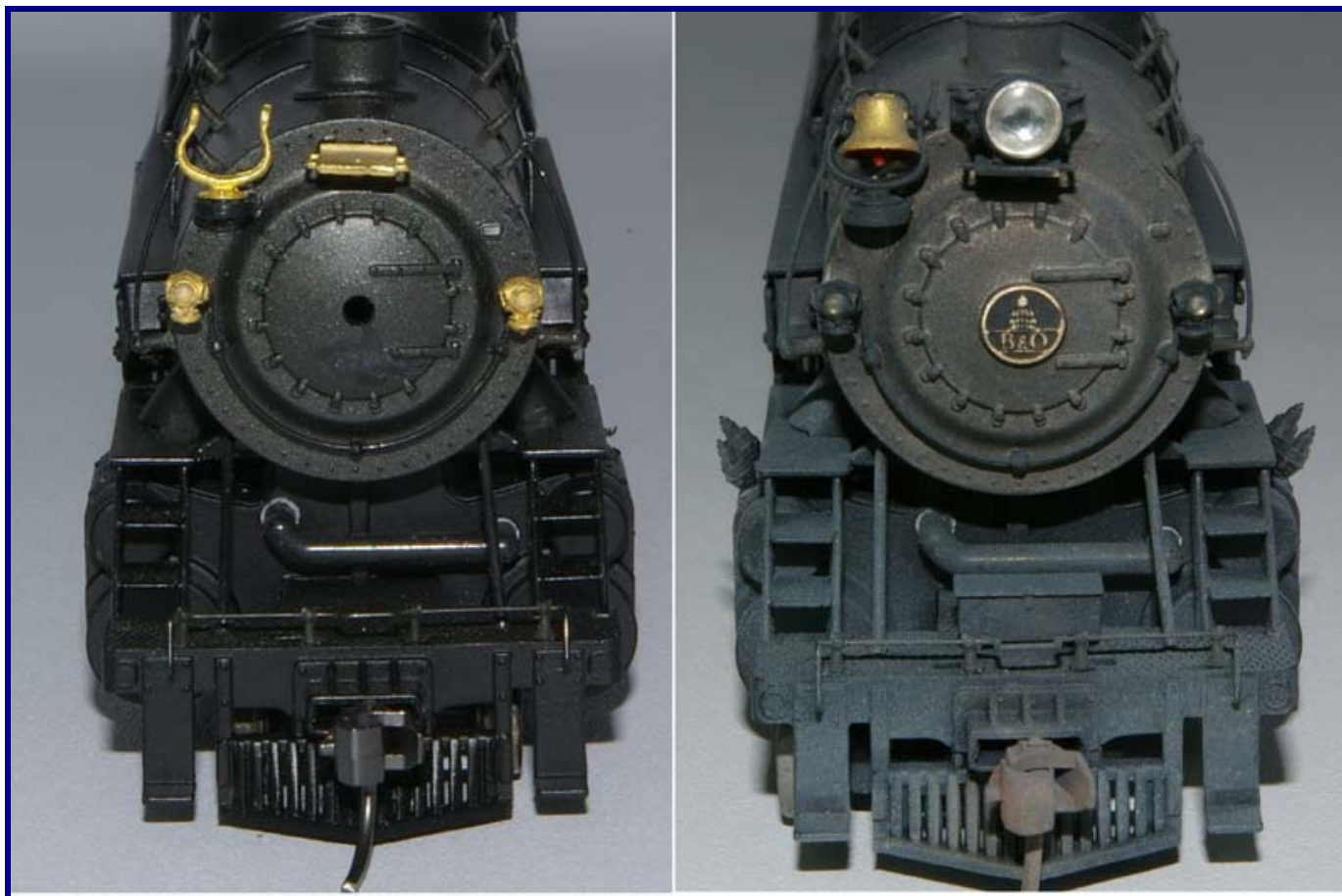
For DCC, it should be simpler, but it isn't. You should be able to just remove the board from the USRA long tender that comes with the engine, and put it into the Rivarossi tender that we're going to use. Getting the USRA long tender apart is no problem, removing the board is no problem, but, in the entire 4.6 billion year history of Earth, few have been able to successfully disassemble a Rivarossi Vanderbilt tender, and live to tell about it. It seems to me that the easiest approach would be to cut away the cast coal load in the coal bunker, and then put the board in there with a false "floor" holding the coal load. The alternative is to use the long Vandy tender that Bachmann makes for the C&O version of the 4-



8-2. This tender bears a certain resemblance to the tenders that the T's were delivered with, but it won't cut it for a post-war version. Oh, and there is a chance that the Bachmann Vandy uses a different board (it is definitely different from that in the USRA *light* mountain). In which case, you'll still need to do a board transplant.

### That B&O Look.

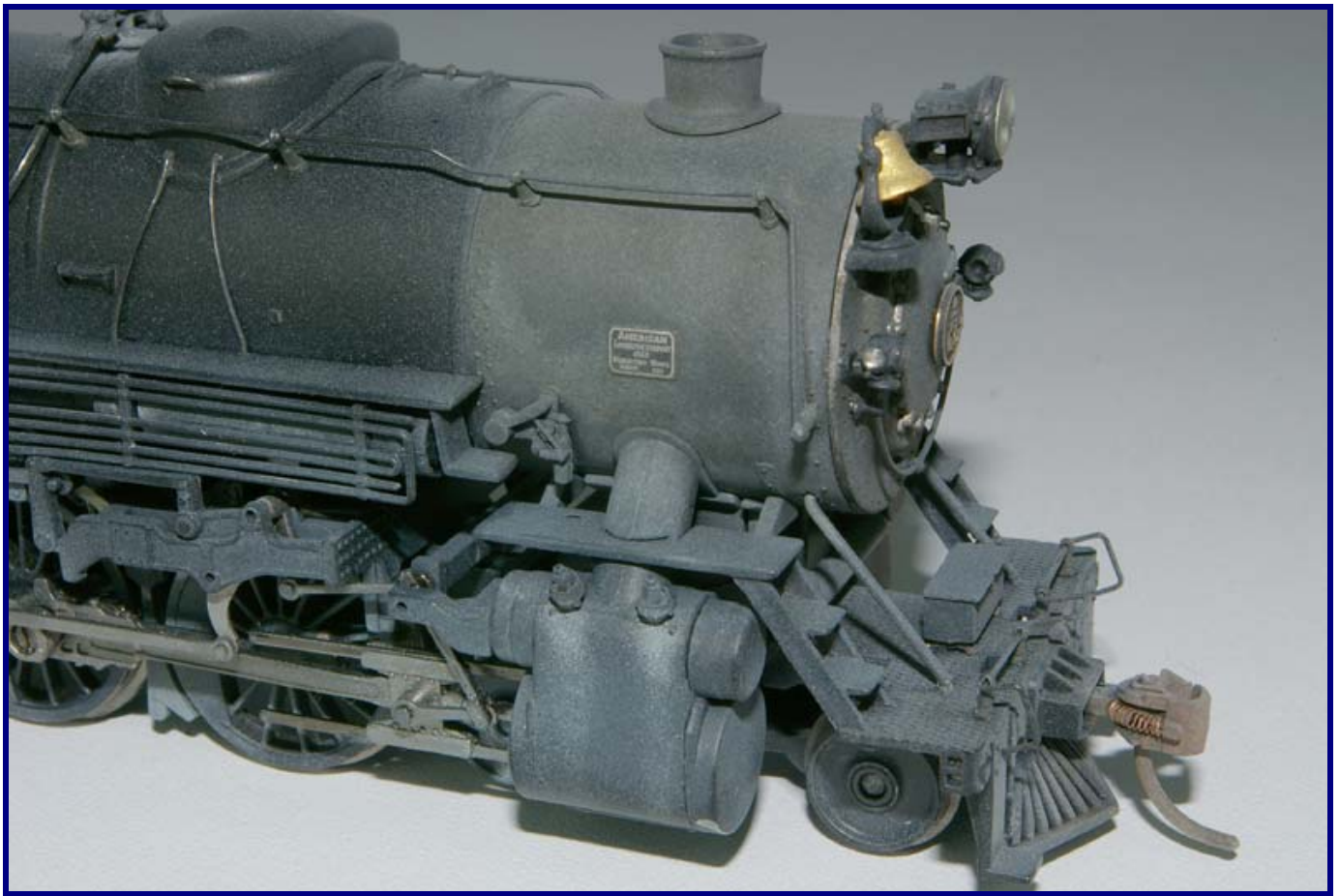
I began by removing everything that was not B&O, or needed to be moved. This included the headlight, bell, markers, pop valves, and check-valves. The B&O "look" really is conveyed by the front-end arrangement, so let's start there.



On my model, the smoke box front popped off easily. I drilled the holes to mount the headlight bracket and the marker lamps. The bell bracket has to be mounted on a horseshoe shaped support. I used the mounting support from a pair of SP style locomotive train boards from an old MDC Harriman locomotive kit. However, this piece could easily be shaped from a square of 0.040" styrene, about 1 x 1 ¼ scale feet in size. Round the edges, drill an appropriate sized hole for the bell bracket, and then glue the support to the smokebox front, such that you won't knock it off and

have to re-glue it on once the engine is completely painted and weathered (don't ask why I mention this).

As you can see in the left panel of Fig 2, I had to sand the smokebox front where I removed the centered headlight bracket. For this reason, I first sprayed the smokebox front with graphite paint (Floquil matches pretty well), and then hand-painted with Polly-Scale Steam Power Black--using a fine brush--the bell and headlight brackets, the markers, and the handrail.

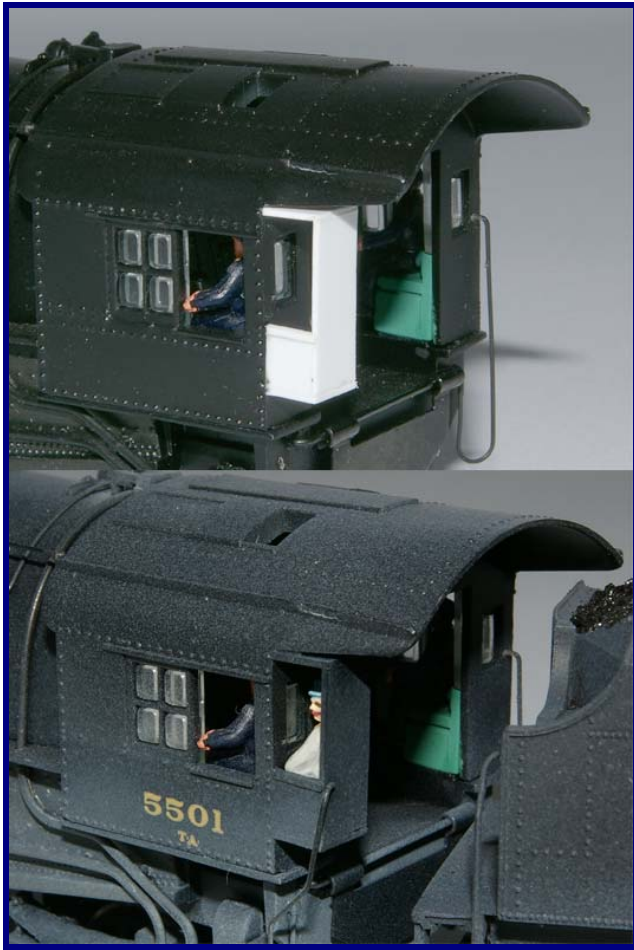


The final details on the front end were the train control box and the cylinder blow-off cocks, which are actually the unshielded pop-valves from the Cal-Scale set. The holes were drilled in the cylinders at this time, but the ATC box, blow-off cocks, and headlight casting were set aside to be painted separately. (*The mechanism to the right of the small step is a flue damper that probably did not exist on #5501. Ed.*)

#### **A Dry Brakeman is a Happy Brakeman.**

Perhaps no other detail on a steam locomotive shouts B&O more than the head-end brakeman's shelter. Offhand, I can't think of any other railroad that extended the fireman's cab the way the B&O did to protect their brakemen. Adding this detail is not at all difficult, if you are willing to accept a couple of slight compromises. On the prototype engines, the fireman's cab side-wall was one piece, contiguous with the head-end brakeman's shelter—for an example, see page 156 of *B&O Power*. The other concession is missing rivets. I don't find either of these problems to be particularly annoying, but I do find the visual representation of the brakeman's shelter quite satisfying.





I built mine from styrene, and simply butted it to the end of the cab. Here's how to do it: using 0.020" styrene, make a side piece,  $1\frac{1}{4} \times 1\frac{1}{2}$  scale feet; a back,  $1\frac{3}{4} \times 4$  scale feet; and a roof and floor, each  $1\frac{1}{2} \times 1\frac{3}{4}$  scale feet. Now, glue the floor to one end of the back. Glue the edges of the side into the "L" formed by the floor and back. Finally, glue the roof onto the other end of the back. When the shelter is dry, gently sand the seams to blend everything together to look like one piece. Then, glue it onto the back of the cab, with the roof butting up against the inside of the cab's roof—you may need to notch out the radius of the cab roof a bit to get the shelter to nuzzle up against it properly. Note that on Spectrum locos I have not been cutting away the cab back to create an opening between the cab and shelter, mainly because the seats are glued in place, and I am afraid of damaging them trying to cut the back off. Once a brakeman figure is glued in place, this isn't too noticeable. On Rivarossi steamers, on the other hand, I do cut away the back of the cab before gluing on the shelter, since there is nothing in the cab that can be damaged while cutting away the cab's back. Once the shelter is in place, I add an armrest, made from a piece of scale  $1 \times 2$ ,  $1\frac{1}{2}$  scale feet long. This is glued directly under the window opening. The final step is to re-bend the cab handrail to accommodate the head-end shelter.





### Water Has to Get In Before it Can Come Out.

Now we will turn our attention to the top of the boiler. First, the side mount check-valves should be removed from their lines by clipping off with a pair of flush cutters, directly where the line attaches to the check-valve. Drill an appropriately sized hole for the Nathan top-mount check-valve, directly behind the boiler band at the back of the sand box. Temporarily place the top-mount check-valve casting into place, and gently bend the lines up and under the handrails to meet the flanges on the new check-valve. You may have to trim them back a bit. Set the check-valve aside for painting.



The old pop-valve holes should be filled—I jammed a piece of suitably sized styrene rod in, and cut it off flush with the boiler surface. As I recall, the fit was tight enough that I didn’t use any glue, but ACC should do the trick if you need to glue your filler pieces in. The final step is to drill out the boiler, in front of the steam dome, for the Cal-Scale muffled pop-valves. They should be fitted between the boiler band, and the steam dome, in a triangular pattern. When built, the engines appear to have had a shield around the pop valves (which can be made from a

piece of brass tubing) but by the fifties, that was gone. I left my pop-valves in natural brass, and glued them in place at this time using ACC.

### You Know Your Engine is Done When it Has a Tender Behind.

For the tender, I used the good old Rivarossi “Big Six” Vanderbilt tender. Judging from the photos in *B&O Power*, the class T locomotives did not have Big Six tenders when built, but by the post-war period, they appear to have either been given Big Six tenders, or else the tenders were rebuilt with larger coal capacity and smaller water capacity such that they strongly resembled the Big Six tenders. At any rate, the only thing in HO that is visually close is the Rivarossi Vanderbilt, so that’s what I used. These tenders were apparently imported by AHM at something like three tenders for every locomotive, since they are always turning up on eBay separately, and that is where mine came from. The only thing done to it was to body mount a Kadee #32 coupler in a 30 series box. By the way, I mounted a Kadee #148 “whisker” coupler in the pilot.

At this point, I sprayed all of the brass parts with Polly-Scale Steam Power Black. I also painted the tender black. The tender sides, back, and cab sides were then sprayed with Polly-Scale Gloss. Champ decals were used for the lettering, including tender capacity data on the tender back (I used S-1 values), and then the tender and cab sides were finished with Polly-Scale flat. The inside of the bell was painted Polly-Scale Caboose Red. The B&O plate, after painting, was polished with very fine grit wet/dry sandpaper to get the raised areas to be brass colored.

The headlight, bell, and Nathan top-mount check-valve were glued in place. The top of the bell was brush-painted black, along with the filler pieces at the old pop valve locations, and MV lenses were epoxied into the headlight and markers. The lines to the check-valve were ACC’ed into place, although epoxy might have been a better choice. The annoying ALCO builder’s plate was left on to drive the purists crazy. A brakeman, after amputating his legs, was added to the shelter. The engine was then weathered with thinned, airbrushed Polly-Scale earth, rust, and grime colors, crushed coal was glued into the tender bunker, and the engine was placed into service on my version of Sand Patch.

## Materials

Bachmann Spectrum 82501 USRA 4-8-2 Heavy Mountain with USRA Long Tender, painted, lettered  
Rivarossi Vanderbilt Tender (most likely source is eBay)

Cal Scale:

- 190-244 B&O Plates
- 190-247 Pop Valves, two packs
- 190-251 Boiler Check Valve, Nathan Top Feed
- 190-280 Marker Lights, Loco & Tender
- 190-281 Standard Bell, Rope Pull
- 190-246 Headlight Bracket
- 190-205 Pyle Headlight

Precision Scale 585-3315 Tool Box, General Purpose

Kadee:

- 32 Medium Overset Shank couplers
- 148 Whisker Couplers

MV Products:

- 180 Clear Lens, headlight
- 300 Clear Lens, markers

Evergreen:

- 1 x 2 HO scale styrene strip
- 0.020" styrene sheet
- 0.040" styrene sheet

Champion Decal Co. EH-6D B&O Dulux Steam Locomotive lettering

Polly-Scale:

- Steam Power Black
- Caboose Red
- Flat Finish
- Gloss Finish

Floquil Graphite

## References:

Sagle, Lawrence W. and Alvin F. Staufer. *B&O Power*. 1964. Alvin F. Staufer.

*USRA Engine Specs*. <http://hosam.com/grd/usra.html>

Edson, William D. *Steam Locomotives of the Baltimore & Ohio. An All-Time Roster*. 1992. William D. Edson, Potomac, MD

Westcott, Linn H. (editor). *Model Railroader Cyclopedia—Volume 1. Steam Locomotives*. 1960. Kalmbach Publishing Co., Waukesha, WI.

McGuirk, Martin J. *Baltimore and Ohio Railroad in the Potomac Valley*. 2001. Kalmbach Publishing Co., Waukesha, WI.





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## ***SD-7 #760 – MODELING B&O’s FIRST SD TYPE LOCOMOTIVE***

**BY BRUCE ELLIOTT**

**PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.**



John Teichmoeller Photograph.

### **The Prototype**

This unit was built by EMD, in March of 1952, as demonstrator #991, the second of its kind. As a demonstrator, it was equipped with all of the “bells and whistles”. These included both dynamic brakes and a vapor-type steam generator. By this time, EMD primarily sold locomotives with the short hood at the front end. The #991 was tested on the B&O’s Buffalo Div. in early May 1953. Operating out of Riker yard, it was utilized on various mine runs on the Indiana branch and a tonnage train on the Clearfield branch

for comparison with the EL-class mallets then holding down those assignments. The locomotive was also used for two shifts on the hump at Cloe yard, just east of Riker. B&O officials were sufficiently impressed that the railroad ordered four SD-7’s numbers 761-764, built in November 1953. This was followed with two orders of SD-9’s numbers 765-772, built from December 1954 through January 1955 (to replace the EL’s on the Buffalo Division) and numbers 773-774, built in May 1955.



SD-7 #763 Winchester, VA 6-25-54 RG Dunn Photograph. B&ORRHS Collection.

The 991 was acquired by the B&O from EMD in August of 1953 and renumbered it #760. It stood out from virtually all of the B&O's other road-switchers with respect to its control stand. All other EMD road-switchers built for the B&O had the long-hood-forward orientation. This did not change until 1962 with the arrival of the GP-30's. It was initially assigned to Connellsville, Pa., as the hump yard engine, and saw occasional passenger service on trains 547 and 548, the local between Connellsville and Pittsburgh, Pa. The engine returned to Riker yard nearly two years later in May 1955. It was designated as the protect engine for Buffalo Div. Passenger trains 251 and 252 and did, in fact, make a couple of runs in that service during September and October of 1955. However, it primarily served with the Riker rounds pool – crews that made turns out of Riker to the Ernest, Kent and Lucerne mines, as well as the towns of Indiana, Iselin and Vintondale, on the Indiana branch. The Riker rounds pool also served Proctor mine on the former B&S trackage east of DuBois, as well as the Clearfield turn. To the west, the #760 made runs to Lumsted mine, near Echo, and the Craigsville branch. Under normal conditions, #760 worked alone, but on May 27<sup>th</sup> 1955, it was paired with F-3a #155, on a run to Lumsted, and in an even more unusual pairing, it worked with SW-9 #600 on a Christmas Eve run to Ernest. On November 1<sup>st</sup> 1956, GP-9 #683 arrived from Glenwood in train QD104, signaling the replacement for #760. On November 3<sup>rd</sup>, 760 made a run to Ernest

and, two days later, was taken (dead in train) to Glenwood, on QD-91. Once again, it was assigned to hump service at Connellsville, Pa. During its service life, it wore many numbers, including #7400 in early 1957 and then #1826, in June of 1964. This is the number it wore into retirement. Cumberland was its last terminal assignment.

### The Model

To build this unit, I started with a Proto 2000 SD-7, in “as delivered” B&O colors. This was a relatively easy conversion. However, this model did not have dynamic brakes as the prototype did, nor did it have the steam generator equipment on the short end of the hood. The models also did not have the steam connection on the pilot or signal lines. The steam generator air intake and boiler exhaust vents are available from Details West, and are easily mounted with ACC. The steam connections and signal lines are available from Cal-Scale. The fuel tank vent was installed on the engineer's side, and is available from Details West. In order to install dynamic brakes, I chose to scratch-build the assembly. SD units have two exhaust fans for the dynamic, of 36” each, as opposed to one fan on a GP unit of 48”. Therefore, the dynamic cooling system is going to be longer than what comes on a GP. The only aftermarket parts available in HO, is dynamic brakes for GP's. I chose to pass on these parts. The 36” fans were also purchased from Details West, and the side hood vents were from an Athearn GP-7.



The first thing I built was the base that the fans. Not having exact measurements, I spaced the fans by

sight, from photographs of SD units with dynamic brakes. The base was a piece of styrene 9” high x 4”



9" wide x 8' 4" long. Unfortunately, I had already figured out that the dynamic fans would not fit between the exhaust stacks. So both of the exhaust stacks had to be shaved off, as well as two lift rings. Once they were removed, the dynamic fans were evenly spaced in the shaved off area where the exhaust stacks were. The new exhaust stacks by Detail Associates were mounted about 18 scale inches outboard from where they had been, on the non-dynamic version. Building the side vents required two sets of vents from Athearn in order to achieve the increase in length between a GP and an SD for dynamic brakes. You have to pay attention to Athearn dynamic vents. A pair of them on a unit face in different directions. You definitely want to cut two

vents from the same direction to go on a side as a pair. I'm sure an error of miss-matched vents would be noticeable. A winterization cover (an add on part supplied with the locomotive) was installed on the radiator fan closest to the dynamic brake fans.

Since I'm building a unit in the as delivered paint scheme, and that is the way I purchased the unit, I only had minor touch up painting to do on the roof. The number boards were renumbered, as was the cab. The engineer and fireman were painted. This is the only B&O SD that was designed to run short hood as the front of the engine. This was because it was an EMD demonstrator.



John Teichmoeller Photograph



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**PLANNED FOR THE NEXT ISSUE**  
**HO Scale GM50 Diesel Locomotive**  
**N-17 and subclasses (Prototype)**

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